

AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A liquid crystal display panel comprising:

two substrates fixed together by a seal member with their main surfaces opposed to each other;

liquid crystal sealingly stored in a region surrounded by said two substrates and said seal member; and

a plurality of columnar spacers arranged in the region surrounded by said two substrates and said seal member, wherein

said column spacers are arranged such that a number density of said columnar spacers gradually decreases as the position moves from a center of a display region toward an outer periphery.

2. (Withdrawn) A liquid crystal display panel comprising:

two substrates fixed together by a seal member with their main surfaces opposed to each other;

liquid crystal sealingly stored in a region surrounded by said two substrates and said seal member; and

a plurality of columnar spacers arranged in the region surrounded by said two substrates and said seal member, wherein

a number density of said columnar spacers in a first region near an inner side of said seal member is smaller than that in a second region inside said first region.

3. (Withdrawn) A liquid crystal display panel comprising:

two substrates fixed together by a seal member with their main surfaces opposed to each other;

liquid crystal sealingly stored in a region surrounded by said two substrates and said seal member; and

a plurality of columnar spacers arranged in the region surrounded by said two substrates and said seal member, wherein

a number density of said columnar spacers in a first region except for a display region is smaller than that in a second region outside said first region.

4. (Previously presented) A liquid crystal display panel comprising:

two substrates fixed together by a seal member with their main surfaces opposed to each other;

liquid crystal sealingly stored in a region surrounded by said two substrates and said seal member; and

a plurality of columnar spacers arranged in the region surrounded by said two substrates and said seal member, wherein

said columnar spacers include:

a first columnar spacer, and

a second columnar spacer being higher than said first columnar spacer when receiving no load;

said first columnar spacer is arranged in a first region near an inner side of said seal

member and a second region located inside said first region; and

said second columnar spacer is arranged in said second region, and wherein

said column spacers include a plurality of first columnar spacers and a plurality of second columnar spacers,

the second column spacers having a height and a width, where the height of the second column spacers are 45 percent of the width of the second column spacers,

the first column spacers having a height and a width, where the height of the first column spacers are 43 percent of the width of the first column spacers,

each of said plurality of second column spacers are arranged at a rate of one spacer per ten picture elements, and

each of said plurality of first column spacers are arranged at a rate of one spacer per fifteen picture elements.

5. (Withdrawn) A method of manufacturing a liquid crystal display panel comprising:

a spacer forming step of forming columnar spacers on one or both of two substrates to be adhered together, said spacer forming step being configured to form said columnar spacers such that a number density of said columnar spacers decreases as the position moves from a center of a display region to be formed toward an outer periphery.

6. (Withdrawn) The method of manufacturing the liquid crystal display panel according to claim 5, further comprising:

a liquid crystal drop applying step of applying a drop of liquid crystal to one or both of

said two substrates, wherein

said liquid crystal drop applying step applies a smaller quantity of liquid crystal than a calculated value obtained when said two substrates are parallel spaced from each other by a distance of a designed value.

7. (Withdrawn) A method of manufacturing a liquid crystal display panel comprising:

a spacer forming step of forming columnar spacers on one or both of two substrates to be adhered together; and

a seal member arranging step of arranging a seal member on a main surface(s) of one or both of the substrates to be adhered together, wherein

said spacer forming step is configured to form said columnar spacers such that a number density of said columnar spacers in a first region near an inner side of said seal member is smaller than that in a second region inside said first region.

8. (Withdrawn) The method of manufacturing the liquid crystal display panel according to claim 7, further comprising:

a liquid crystal drop applying step of applying a drop of liquid crystal to one or both of said two substrates, wherein

said liquid crystal drop applying step applies a smaller quantity of liquid crystal than a calculated value obtained when said two substrates are parallel spaced from each other by a distance of a designed value.

9. (Withdrawn) A method of manufacturing a liquid crystal display panel comprising:

a spacer forming step of forming columnar spacers on one or both of two substrates to be adhered together; and

a seal member arranging step of arranging a seal member on a main surface(s) of one or both of the substrates to be adhered together, wherein

said spacer forming step is configured to form said columnar spacers such that a number density of said columnar spacers in a first region avoiding a display region to be formed is smaller than that in a second region outside said first region.

10. (Withdrawn) The method of manufacturing the liquid crystal display panel according to claim 9, further comprising:

a liquid crystal drop applying step of applying a drop of liquid crystal to one or both of said two substrates, wherein

said liquid crystal drop applying step applies a smaller quantity of liquid crystal than a calculated value obtained when said two substrates are parallel spaced from each other by a distance of a designed value.

11. (Withdrawn) A method of manufacturing a liquid crystal display panel comprising:

a spacer forming step of forming columnar spacers on one or both of two substrates to be adhered together; and

a seal member arranging step of arranging a seal member on a main surface(s) of one or both of the substrates to be adhered together, wherein

said spacer forming step is configured to form a first columnar spacer in a first region near an inner side of said seal member, and to form the first columnar spacer and a second columnar spacer higher than said first columnar spacer in a second region inside said first region.

12. (Currently amended) A substrate with a spacer comprising a substrate; and a spacer formed on said substrate, wherein

said spacer has at least a first spacer portion, and a second spacer portion formed above said first spacer portion, and an upper portion of said first spacer portion has a larger diameter than a bottom of said second spacer portion, and

the upper portion of said first spacer portion has a groove surrounding said second spacer portion in a plan view.

13. (Canceled)

14. (Previously presented) The substrate with the spacer according to claim 12, wherein assuming that an upper portion of said spacer has a diameter of C, and said spacer has a height of H from the bottom to the upper portion, said spacer has a diameter of $(1.8 \times C)$ or more at the bottom, and has a diameter of $(1.05 \times C)$ or less at a height of $(0.85 \times H)$ from the bottom of said spacer.

15. (Previously presented) A panel having the substrate with the spacer according to claim 12; an opposed substrate opposed to said substrate with the spacer, and a function material layer interposed between said substrate with the spacer and said opposed substrate.

16. (Previously presented) The panel according to claim 15, wherein
said function material layer is a liquid crystal layer.

17. (Previously presented) A method of manufacturing a panel according to claim 16,
comprising the steps of:

forming a frame-like seal member on a substrate surface of one of said substrate with the spacer and said opposed substrate;

applying a liquid crystal material to an inside of a frame of said seal member; and
adhering said substrate with the spacer and said opposed substrate together to form said liquid crystal layer.